



## SAN BERNARDINO MICROWAVE SOCIETY, Incorporated

FOUNDED IN 1968

A NONPROFIT AMATEUR TECHNICAL ORGANIZATION DEDICATED  
TO THE ADVANCEMENT OF COMMUNICATIONS ABOVE 1000 MC.

# W6IFE Newsletter

## February 2005 Edition

President **Chris Shoaff N9RIN** 2911 Calle Heraldo San Clemente CA 92673 949-388-3121  
cshoaff@netzero.net

Vice President **Doug Millar, K6JEY** 2791 Cedar Ave Long Beach, CA 90806 562-424-3737  
doughhelen@moonlink.net

Recording Sec **Mel Swanberg, WA6JBD** 231 E Alessandro Blvd Riverside, CA 92508 909-369-6515  
wa6jbd@verizon.net

Corresponding Sec **Kurt Geitner, K6RRA** 1077 E Pacific Coast Hwy TMB142 Seal Beach, CA 90740 310-718-4910 k6rra@gte.net

Treasurer **Dick Kolbly, K6HIJ** 26335 Community Barstow, CA 92311 760-253-2477  
dick@eventhorizons.com

Editor **Bill Burns, WA6QYR** 247 Rebel Rd Ridgecrest, CA 93555 760-375-8566 bburns@ridgecrest.ca.us

Webmaster Chip Angle, N6CA 25309 Andreo Lomita, CA 90717 310-539-5395 chip@anglelinear.com

ARRL Interface Frank Kelly, WB6CWN 1111 Rancho Conejo Blvd. #501 Newbury Park, CA 91320  
805-499-8047 wb6cwn@version.net

W6IFE License Trustee Ed Munn, W6OYJ 6255 Radcliffe Dr. San Diego, CA 92122 858-453-4563  
w6oyj@amsat.org.  
w6oyj@amsat.org.

At the **3 February** meeting Dick K6HIJ will talk about "What is the perfect IF rig". Folks are to bring something to auction off during the meeting for the benefit of the Auxiliary Fund, which is to provide extra monies to the treasury for MUD05 expenses. The SBMS meets at the American Legion Hall 1024 Main Street (south of the 91 freeway) in Corona, CA at 1900 hours local time on the first Thursday of each month. Check out the SBMS web site at <http://www.ham-radio.com/sbms/>.

**Last meeting-** Welcome to member Paul, KH6HME during his annual visit to the mainland. Dennis, WA6NIA presented a nice video discussion on his efforts to plan and operate on 2 meter EME. Being an engineer his spiral design method represented some of the sequences that amateurs go through in trying to get on a new mode of operation. Very good talk Dennis! Doug, K6JEY was elected to be the auctioneer for the Auxiliary Fund

operations at each meeting in the near future. Items auctioned during the meeting were a pic keyer, lengths of #6 wire and a deep cycle sealed battery.

### Scheduling.

3 March to be determined

19 March there will be another potluck dinner held at Dave's Lab.

7 April Officer Elections and TBD

11-13 June ARRL June VHF QSO Party

25-26 June ARRL Field Day

6-7 August ARRL UHF Contest

20-21 August ARRL 10 GHz and Up contest

10-12 September ARRL September VHF QSO Party

17-18 September ARRL 10 GHz and Up contest

**Activity** reported at the January SBMS: Dick WB6DNX had a new product at Power Werks- a computerized

Battery Analyzer which seemed to be an interesting item; Frank WB6CWN has been playing with his DSP-10 in the beacon mode on the 10 GHz rig just pointing out his door catching air craft going over head and noticing rain scatter returns by it Doppler; Chuck WA6EXV is refurbishing his station consoles to clean up the station and add in better 10 MHz reference lock signals; Bill, WA6QYR is building a DSP-10 and had been doing testing of items from previous conventions; Ken, W6DTA had a fun Christmas; Howard, WA6YGB is working on his 1296 tube amplifier; Doug, K6JEY tested a number of 2C39 type tubes for operation on 1296 MHz and had his array blow off this roof; Pat, N6RJM is building a 902 MHz transverter; Gerry K6DYD mounted his dish on a tripod; John KH6HZ smoke tested a Qualcomm 1152 MHz board; Wayne, KH6WZ built a 4x multiplier and is working on power connectors; Larry KG6EG machined a heat sink for a new solid state 10 GHz amplifier; Charles Patton is working on his amateur license and a spectrum analyzer; Larry, K6HLH worked on a WIFI system;

### "Wants and Gots for sale"

For Sale: Efraton FRK / M-100 Rubidium Oscillator \$350 Dennis WA6NIA 562-858-2883

Want: six runs of 7/8th inch hardline 100 ft each with connectors if possible Mike W6YLZ 310-383-1000

Want WR-90 to SMA adapter WB6JDH

### MICROWAVE UPDATE 2005

Chairman: Pat Coker, N6RMJ of SBMS

Planning Committee: Pat Coker, N6RMJ of SBMS

David Peters, KI6FF of WSWSS

Dennis Kidder, WA6NIA of SBMS

Presentations: Chip Angle, N6CA

Publicity: Wayne, KH6WZ

PRIZES: Dave Glawson, WA6CGR

Registration & Finance: Dick Kolbly, K6HIJ

Family Program: still needs a leader

Location: Sheraton Cerritos Town Center

List of Presentations:

SBMS 50 YEARS Dick Kolbly, K6HIJ

Pat, N6RMJ signed at contract with the Cerritos Hotel. Mel, WA6JBD will be collecting surplus store information for the junk run. The SBMS web site has MUD 2005 subsite.

During the January meeting logos for hats Tee shirts and beverage mugs was discussed. The February meeting will have some decisions to make on final designs. Room rates were discussed at the \$99 level.

### Owens Valley Radio Observatory Project

Things are hold while Cal Tech reviews our proposal and while Observatory folk are tied up with other projects. Doug K6JEY is to be calling in January to find out status of SBMS proposals.

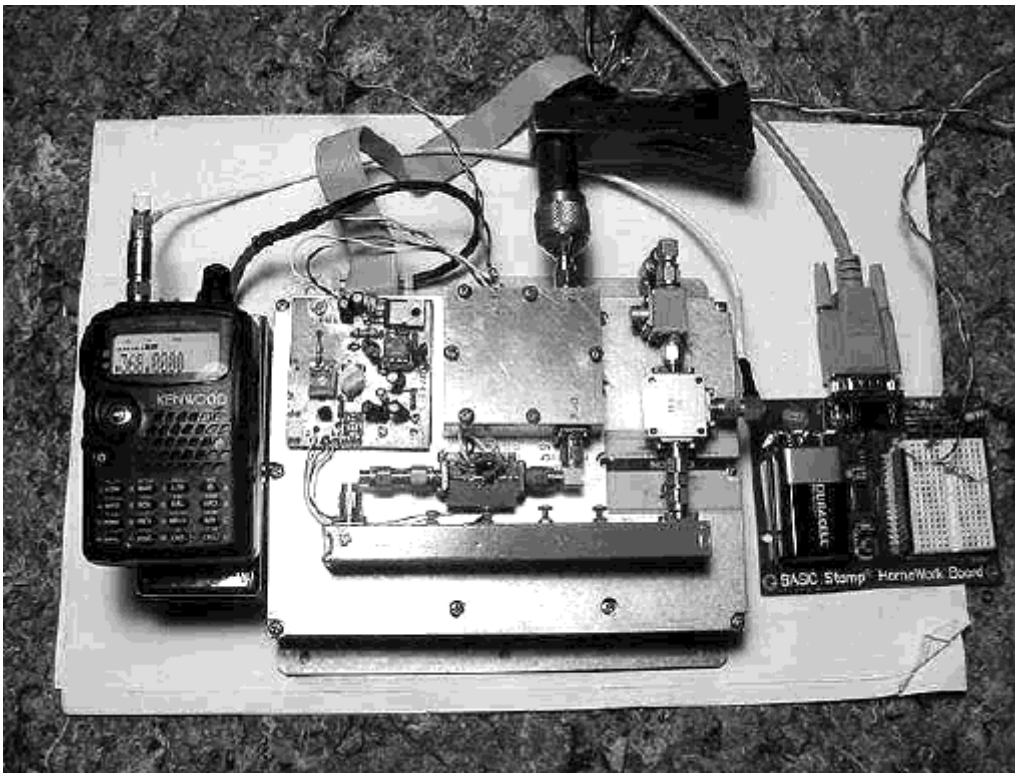
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Subject: 10GHz radio

Hello again, Last night with some expert advice from Chip, I put together this 10368MHz receiver built around a high level microwave mixer in the junk box and a Verticom 8-10GHz frequency synthesizer from ebay. It works very well and I wanted to share it. See the attached picture showing everything less power supply.

The IF radio is a little Kenwood HT wideband receiver tuned to 368MHz, CW mode. The 5MHz OCXO reference oscillator is the metal can under the HT. It feeds the Verticom synth which is the main box everything is double stick taped to. This synthesizer has a serial programming port, so the there's a BASIC stamp controller in the view used to send six bytes of code at power-up. The synth will work with either a 5 or 10 MHz reference via an internal jumper. You have to remove a ton of screws to get at the jumper, so I did once and drilled a hole in the case for future access. The Verticom puts out +16 into an isolator, then into the DBM. I used a couple of WA6EXV 10GHz preamps at the front-end feeding a WA6EXV waveguide filter into the mixer RF port. There's about 30dB of gain there and close to 1dB NF. The IF receiver connects to the mixer IF port via a 3dB pad, and when everything is running the HT meter noise level rises and the S meter sits at a couple of bars. When I took this picture, a signal generator on the bench was full strength.

The Verticom is very quiet and is a nice match for the high level mixer. The next step will be to install an SMA relay in front of the waveguide filter and begin building the TX side.

This is a fun project and likely the prototype for some newer (and much smaller) radios here. 73, Frank



Subject: [Sbms] 36" offset dish ?

Hi All, I was wondering how much a 36" offset dish should go for? I found a brand new dish that is about \$95. I can get 2 of

them and the cost would be about \$80 each. Is that a good deal? I know some of you have bought dishes somewhat recently, so I thought I would ask.

Thanks, Chris n9rin

Chris several of us have bought the Prodelin dish 30inch for \$122.22 delivered to your door. This is known to be good.

I would question the other's , the Prodelin in fiberglass and light weight and will not bend if and when dropped.

N6RMJ PAT

Chris, REMEMBER....just cuz it's a dish doesn't mean it is a good dish, offset or otherwise. Some dishes are so bad they won't even make a good bird bath...(hole in center). Buy a proven brand! Prodelin dishes are very accurate (proven)

48 inch = \$136 + \$40 shipping

30 inch = \$90 + \$30 shipping

73 Chip

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Hello everyone-Myself and Pete, W4WWQ would like to report what should be a new World and North American DX record

for the 122GHz band. (This band is "new" in the USA as of March 2004 and W0EOM reported the 1st QSO on

the band several months ago.)

Using the club callsign W2SZ/4 from a fixed location in FM07fm, we managed to work the required 5 grids (FM06, FM07, FM08, EM96, EM97) for the ARRL's VUCC award. The first grid was worked last week, while the final four were worked in a "grid square blitz" over a 10 hour period last night.

Our best DX was:

Date: Jan 16, 2005 Time: 04:22z WA1ZMS/4 N36-59-28 W80-07-17 EM96wx W2SZ/4 (W4WWQ op.) N37-31-00 W79-30-35 FM07fm Distance: 79.6Km

WX at WA1ZMS QTH: Temp: -2.6C Dew Point: -10C Relative Humidity: 58% Pressure: 937mb Atmospheric loss: 0.472db/km)

Equipment used (short version): 12" parabolic with Cassegrain feed TX power: 5mW at feed Rigs are phase locked 61GHz Gunn sources driving a pair of GaAs frequency doublers. The doublers serve as harmonic mixers for receive with active DC bias control. Frequency references are Wenzel ultra-low-noise 5MHz crystal oscillators. More details will be posted at [www.mgef.org](http://www.mgef.org) over the next few days. 73, Brian, WA1ZMS/4

Hi all- Since we had some tiny signal margin on 122GHz at 79km and we knew we could get a few more dB from the use

of Spectran software, we were able brave the cold night air and better our World DX record to 114km.

Details of QSO: Date: Jan 18, 2005 Time: 03:46z

WA1ZMS/4 N36-43-03 W80-19-23 EM96ur

W4WWQ/4 N37-31-00 W79-30-35 FM07fm

Distance: 114.4Km

WX at WA1ZMS QTH: Temp: -12.0C (10F) Dew Point: -23.1C Relative Humidity: 37% Pressure: 920mb Atmospheric loss: 0.336db/km

WX at W4WWQ QTH: Temp: -17.5C (0F) Dew Point: -21C Relative Humidity: 74% Pressure: 877mb Wind: 24km/hr

Wind chill: -28C (-18F) <--- !!!! Atmospheric loss: 0.362db/km

A few photos, Spectran screen shots, and some audio files should be posted at [www.mgef.org](http://www.mgef.org) in a few days.

I'd like to really thank Pete for dealing with sub-zero wind chill temperatures while making the QSO. It took us about 40 minutes to send and copy all the necessary info via QRSS mode. My feet were so cold just standing around waiting for the

very slow CW to be sent that I put a pair of chemical/air-activated hand warmers in my shoes. They worked very well. No more cold toes! -Brian, WA1ZMS



Hi All, Well, thanks to John KJ6HZ and others we finally did it. Talked to K9SLQ on 23Cm EME yesterday. About 150watts, .2db NF and a 7foot dish. Signals were full of libration but quite strong on peaks, even speaker copy. More work to do, but an initial success. Pictures included of rig and dish. 73, Doug K6JEY



Doug, K6JEY operating on 1296 MHz EME from his QTH. Doug has some neat stuff in his "shack". Check out the background.

The San Bernardino Microwave Society is a technical amateur radio club affiliated with the ARRL having a membership of over 90 amateurs from Hawaii and Alaska to the east coast and beyond. Dues are \$15 per year, which includes a badge and monthly newsletter. Your mail label indicates your call followed by when your dues are due. Dues can be sent to the treasurer as listed under the banner on the front page. If you have material you would like in the newsletter please send it to Bill WA6QYR at 247 Rebel Road Ridgecrest, CA 93555, [bburns@ridgecrest.ca.us](mailto:bburns@ridgecrest.ca.us), or phone 760-375-8566. The newsletter is generated about the 15th of the month and put into the mail at least the week prior to the meeting. This is your newsletter. SBMS Newsletter material can be copied as long as SBMS is identified as source.

San Bernardino Microwave Society newsletter

247 Rebel Road

Ridgecrest, CA

93555

USA

